



DEPARTMENT OF STATE

Washington, D.C. 20520

RS/R FILES

Keep this study together.

S/S - 6898

May 12, 1969

Copies To:

J

J/PM

ACDA

S/S-S:CMS

Dear Dr. Brennan:

Secretary Rogers has asked me to answer your letter of April 25, 1969. As you may know, he is leaving for an overseas trip which will take him out of the country for the balance of this month.

The issues raised in your article are indeed important ones. I would be happy to meet with you, as would Mr. Gerard Smith, Director of the Arms Control and Disarmament Agency. Both of us are quite heavily involved in the problems with which you are concerned. If you wish to call my office, I am sure a mutually agreeable time can be arranged.

Sincerely,

U. Alexis Johnson
U. Alexis Johnson

DEPARTMENT OF STATE A/CDC/MR	
REVIEWED BY <i>U. Alexis Johnson</i>	DATE <i>7/16/80</i>
RDS ☐ or XDS ☐ EXT. DATE	
TS AUTH.	REASON(S)
ENDORSE EXISTING MARKINGS ☐	
DECLASSIFIED ☐ RELEASABLE ☒	
RELEASE DENIED ☐	
PA or FOI EXEMPTIONS	

Dr. Donald G. Brennan,
Hudson Institute,
Quaker Ridge Road,
Corteen-on-Hudson,
New York 10520.

MICROFILMED
BY S/S: CMS

J/PM:LSloss 5/7/69

Retyped in 5/10/69 Cleared w/ACDA-Gen.Davis

137



DEPARTMENT OF STATE

Washington, D.C. 20520

REF ID: A6888

May 8, 1969

34

MEMORANDUM TO: J - Ambassador Johnson

THROUGH: S/S *lw*

FROM: J/PM - Philip J. Farley *JP*

SUBJECT: Letter from Dr. Brennan, Hudson Institute

The attached letter from Dr. Brennan of Hudson Institute (Tab B) requests an appointment with the Secretary to discuss with him his views on ballistic-missile defense. In view of the Secretary's travel plans during the next several weeks, I am suggesting that he meet with you and/or Gerry Smith. Gerry is prepared to see him, and I believe you would find a meeting of interest if your time permits.

Recommendation

That you sign the attached letter, at Tab A.

Approved *✓*

Disapproved

Suggest Gerry Smith see him.

Attachments:

Tab A Letter to Dr. Brennan

Tab B - Letter from Dr. Brennan

Clearance:

① ACDA - General Davis

J/PM:LSloss:ijg
5/7/69

REF ID: A6888

JDSON INSTITUTE

DECLASSIFIED

QUAKER RIDGE ROAD, CROTON-ON-HUDSON, N. Y. 10520 CABLE ADDRESS HUDSON 914 RO 2-0700

April 25, 1969

The Honorable William P. Rogers,
Secretary of State
U. S. Department of State.
Washington, D.C.

My dear Mr. Secretary:

I am taking the liberty of sending you a copy of an article of mine in the current issue of Foreign Affairs on ballistic missile defense, and a statement on the same subject presented to the Gore Subcommittee of the Senate Foreign Relations Committee in their recent hearings.

As you may possibly know, I have been closely concerned with problems of arms control for many years. In contrast to some other students of arms control, however, I believe--as set forth in the enclosed materials--that missile defenses can have a highly constructive role in connection with arms control and disarmament. There is a perspective on these matters that many find very illuminating, but which has evidently not become visible to some or all of the senior officers of the Administration.

If I am not mistaken, you would find it useful to hear something of this perspective, and to understand its relationship to other alternatives now before the Government. I should be grateful for an opportunity to tell you something of these possibilities, in part as an advocate of one particular alternative but in part as an analyst who may clarify other alternatives as well.

I shall ask my secretary to phone your office the latter part of next week, in the hope of securing an appointment.

Sincerely yours,

DG Brennan

D. G. Brennan

DGB:jr
Encl. F.A. Reprint
Statement 3/28/69

DECLASSIFIED

DEF 1. U.S.

DECLASSIFIED

Statement by Donald G. Brennan

before the

Subcommittee on International Organization
and Disarmament Affairs
of the
Committee on Foreign Relations
U.S. Senate

March 28, 1969

DECLASSIFIED

DECLASSIFIED

Mr. Chairman, and Members of the Committee. It is a privilege for me to appear before you. The last time I was thus privileged was when I appeared before the sessions of the full Foreign Relations Committee in 1963 to record my support of the Nuclear Test Ban Treaty. I appreciate your willingness to hear me in this present setting, to set forth some views I know some of you now oppose. It is encouraging that there may still be some open minds.

Let me tell you something of my background for speaking on ballistic missile defense, which I shall call BMD for short. My main professional background and training were technical, and came primarily from MIT, with which I was associated in various ways from 1951 to 1962. However, I acquired a strong interest in arms control and other aspects of national security policy beginning in about 1957. I joined Hudson Institute as its first president in 1962 and continued in that capacity to 1964, when I resigned the presidency but continued there since to conduct studies of arms control and other problems of national security policy. I edited and wrote part of the special issue of Daedalus on arms control (fall 1960) and its successor book version titled Arms Control, Disarmament, and National Security, published by George Braziller in 1961, a book that was endorsed by Senator Fulbright among others. I have continued to write frequently on such matters and I now edit the new international journal titled Arms Control and National Security. I have been following the technical developments in BMD for about the past twelve years and have closely studied the strategic and political implications for about the past six years. A more detailed biographical sketch is attached at the end of my statement.

DECLASSIFIED

DECLASSIFIED

It might be useful to remark that my first widely circulated paper on missile defense was a satire written in 1958, called "Project Turnabout", that implicitly ridiculed some of the technical possibilities for missile defense then being studied. I was opposed to the deployment of BMD to protect cities until about the middle of 1964. Since then I have tended to favor such deployment, though not necessarily any possible program at any possible time.

I should like to stress that I am appearing here purely as an individual, and I do not speak for anyone else at Hudson Institute, nor for anyone in the Government or elsewhere. This is especially important to stress because I shall advocate a more substantial defense of cities than the deployment currently recommended by the Administration, and you should not blame them for my views.

Let me now turn to the substance of the issues before us. I should perhaps warn you that some of the things I shall say are quite different from the statements you have been hearing.

Broadly speaking, there are two main possible applications of ballistic missile defense: for the protection of strategic nuclear offensive forces, and for the protection of people and civil resources. The program announced by President Nixon on March 14 has elements of both kinds. The program is intended to lead to a defense of offensive forces that would protect at least some of those forces against a substantial Soviet attack. And it is intended to provide substantial protection of the population against a modest attack, of the sort the Chinese might be able to mount in the 1970's or that might

DECLASSIFIED

DECLASSIFIED³

result from unauthorized launch of a portion of the Soviet force. The component intended to protect people is of a kind called "area defense" and is based on the long-range Spartan missile; it would not provide very much protection against an overwhelming Soviet⁴ attack.

I shall come back to the subject of city defense, to which the bulk of my statement is devoted, but let me mention a few thoughts about protecting offensive forces. I have not reviewed all of the detailed considerations that led to the new program, but those I did review made it appear that the decision was sound. However, it has in any event been clear for some few years that Soviet offensive-force developments might at some time require improvements in the protection of our own offensive forces, and it should not be surprising if that time is now upon us. The Department of Defense has conducted major studies of alternative means of improving this protection, and it has always been clear that BMD was one of the potentially attractive alternatives. Many or most of the critics of BMD for cities--at least among those with some sophistication--have been potentially or actually willing to support BMD for offensive forces; for example, Hans Bethe, in his statement to this Committee on March 6, said that he was in favor of it.

It may be useful to separate sharply two questions about protecting offensive forces. First, to what extent in what circumstances is an increase in that protection justified? Second, what is the best means of increasing that protection? The second question is of a highly technical nature not well adapted to public, or even Congressional, inquiry, and some

DECLASSIFIED⁶

DECLASSIFIED

of the arguments being heard about BMD probably belong to the first question. For example, if someone says he is opposed to BMD for offensive forces because he would rather spend the money on social programs, it is not always clear if he would equally oppose spending perhaps even more money on super-hard silos or on a rail-mobile deployment system for Minuteman.

It is possible to conceive that the detailed scale and timing of expenditures for protecting offensive forces could properly come under Congressional scrutiny, though this would represent a new thing and I am not sure I should favor it. It would in any event have to be done in executive sessions, with sensitive information. It does not seem at all feasible to me to have such scrutiny of the decision as to the best means of providing the protection. The judgment about the best means should be based on a complex of factors that can scarcely be grasped whole by a full-time Secretary of Defense. That a Committee of the Congress could meaningfully penetrate such a judgment seems to me most unlikely.

There are, however, some very important questions that are highly appropriate for Congressional consideration, and I shall return to these.

Let me now turn to the subject of city defenses. The new Administration program is aimed at developing, in an evolutionary way, an area defense that would protect the country against light attacks. It seems to me that beginning the program in this way, at least in general terms, is eminently sensible. However, it also seems sensible to me that the program should ultimately evolve toward a system that would provide more substantial protection. The discussion of these possibilities has become polarized between the terms

DECLASSIFIED

DECLASSIFIED

"thick" and "thin", which is unfortunate because there is a continuous spectrum of possibilities; however, I do favor something "thicker" than the "thin" area defense.

In this regard, I seem to some extent to be on the side of Senator Gore. Senator Gore said, in the secret Senate debate on BMD on October 14 last, as printed on page E9650 of the Congressional Record for November 1:

We have three choices: First, not to deploy; second, to deploy a thin or reasonably effective--maybe--system; or, third, to proceed to deploy vigorously what we would hope to be an effective defense.

We have chosen here the middle course. It is, in my view, the least advisable course. I would have greater trouble in reaching a decision as between not deploying at all and deploying an effective system. I have little trouble with opposing the deployment of a reasonably effective system. I believe it carries with it many of the disadvantages--politically, militarily, and so forth--and carries few of the positive advantages of an effective defense.

The main positive advantage of what Senator Gore called "an effective defense" is, of course, that it might save tens of millions of American lives in the event of a major war, and make an enormous difference in the ability of the country to recover. I have attached to my statement, for insertion in the record, a paper titled "The Case for Missile Defense", in which the arguments for an effective defense are set forth. This paper is similar to an article of mine of that title just published in the April 1969 issue of Foreign Affairs, but the attached version has a few more details. I shall here simply summarize in outline form the main points that seem to me to emerge from that analysis.

DECLASSIFIED

DECLASSIFIED⁶

1. It appears that BMD systems costing less than half the cost of our present air defense system might (in the context of wars that could possibly occur in the mid-1970's and later) reduce U.S. fatalities from levels approximating half the populace to levels approximating ten per cent of the populace, and, by protecting perhaps 90 per cent or more of U.S. resources in production and transportation, facilitate much more rapid economic recovery. There is some chance the system would perform much more poorly than intended, but also some chance it would perform much better. The expected performance would be substantially more important for the country than the expected performance of the air defense system in the past would have been.

2. The Soviets could wholly nullify such a defense only by expenditures on the general order of the cost of the defense itself, or, possibly, more. Thus, quite apart from the fact that much strong evidence indicates that the Soviets are not determined to nullify any and every defense we might build, they would face substantial budgetary and bureaucratic problems in doing so. A partial offset of the defense would be less expensive, but correspondingly less of the insurance value of the defense would be nullified.

3. In view of the fact that a major research and development program on means of penetrating missile defenses has not in several years disclosed any cheap and reliable penetration technique against a good defense, the estimates of the preceding two paragraphs appear to have a stability that begins to approximate our confidence in the security of our best offensive weapons.

(As a parenthetical side remark, on purely historical grounds it should scarcely be surprising that the virtually untrammelled superiority

DECLASSIFIED⁷

that the offense has enjoyed in the past two decades is beginning to be somewhat trammled.)

4. As concerns the fundamentals of deterrence, it is not a basic requirement of U.S. national security that we be able to kill 74 million Soviet citizens and destroy 76 per cent of their industrial capacity, or whatever such numbers are selected, independently of the circumstances and of the Soviet ability to destroy the U.S. The perception that we have such a requirement seems to have contributed to the (apparently false) perception that the Soviets have the same requirement, and this latter idea has contributed to putting us in our present posture, which has been aptly termed a posture of "Assured Vulnerability" by Stuart Pittman. I do believe it is a U.S. requirement to be able to do at least as badly to the Soviets as they could to us, but this principle does not require a posture of "Assured Vulnerability", and would permit the deployment of defenses in both superpowers, at least within substantial limits. The original justification for the posture of the superpowers in past years--that we had to deter because we could not defend--seems to have become distorted in some minds into the false idea that, because we must deter, we cannot defend.

5. If for no other reason than that no foreseeable defense system will reliably reduce hostage levels in the superpowers below several millions, the deployment of BMD will not significantly increase the likelihood of war. Because of the complexity a defense imposes on an attack, BMD seems more likely to reduce this likelihood.

6. The propensities for offense-defense arms races would be dominated by prevailing U.S. and Soviet attitudes as long as defense appears to be

DECLASSIFIED

sufficiently effective as to require comparable expenditure to nullify it. U.S. attitudes at present are mixed, with some favoring deployment of defenses and some opposed. Soviet attitudes seem much less mixed, indeed they seem almost universally to favor emphasis on defenses. Thus it appears that similar U.S. emphasis on defense would probably be the most stable way of avoiding an offense-defense arms race as well as being most desirable from other points of view. The U.S. should stop responding to Soviet defenses with major increases in its own offensive forces, and respond instead with damage-limiting programs of its own; and senior U.S. spokesmen should most certainly stop trying to persuade the Soviets that they must respond to a U.S. defense by increasing Soviet offensive forces. The possibility of an offense-defense race could be further reduced with explicit if informal U.S.-Soviet understandings about strategic forces, giving first priority to controls on offensive forces, with second priority to constraints on defenses, or perhaps no limitation on defenses. However, as long as Soviet offensive forces remain at or above present levels, I do not believe the possibility of a substantial U.S. defense should be excluded by such an understanding.

The United States and the Soviet Union clearly have a large common interest in reducing the scale of potential damage that could result from a war. This common interest is at the heart of arms control. We do not have a common interest in precluding the possibility of limiting damage.

That completes my summary of the strategic issues as I see them.

DECLASSIFIED

DECLASSIFIED

9

I should like now to return to the matter of which questions in major defense policy seem to me appropriate for Congressional consideration. I have already indicated that some do not seem appropriate, such as the selection between alternative weapon systems that would accomplish similar objectives. You may occasionally wish to review the Department of Defense for their general competence in handling such matters, but you cannot generally do that kind of work for them.

There are of course several kinds of decisions where it has long been recognized that a Congressional role is vital. These generally involve important interactions between the Defense Department and the citizenry as a whole. For example, the overall level of the defense budget is a major factor in how heavily we are all taxed; draft policies influence which of our young men shall serve, and for how long; and the general kinds of forces we maintain will relate to the foreign policies the Administration is permitted or encouraged to pursue. Such examples are easy to multiply.

I should like to suggest to you that there is one area of decision that has not previously been recognized explicitly as one of Congressional concern, but which seems to me at least potentially appropriate. One of the two most important points I wish to make to you in this statement is to suggest that explicit consideration might well be given within the Congress to the relative emphasis to be given to strategic offensive forces, on the one hand, and strategic defenses on the other. From the early 1950's until five or six years ago, the technical prospects for an effective defense did not seem very bright, and we became accustomed to protecting ourselves primarily by deterrence--the

DECLASSIFIED

DECLASSIFIED

10

threat to destroy others if we were attacked. Now, however, it begins to appear feasible to shift an increasing degree of our protection to active defense--the ability to reduce the consequences of an attack. It will not be possible for the foreseeable future to shift complete reliance to defense, but important differences of degree appear quite possible. The strategic debate of the recent past has not generally been carried on in these terms, but I believe this is the proper framework.

The reason this area may be appropriate for Congressional concern is that it involves an important interaction between the Defense Department and the citizenry as a whole, namely, what fraction of the population and the resources of the society should be at risk in the unlikely event deterrence fails and there is a major war. Stated another way, one may view the procurement of defenses as something like insurance, and the question of how much insurance is enough, in view of the costs and risks involved, is one that is plainly appropriate for a political process. Of course, it will be clear to you that, as an expert, I have my own views on this matter. But it will also be clear to you that, as an expert, I have found the quality of the treatment of this problem by the Administration in recent years very disappointing.

There would be some potential difficulties in attempting to address this problem directly in a political framework. However, I believe that untutored public opinion in this area may be at least as reliable a guide for general policy direction as more sophisticated but basically superficial theories that are sometimes compounded with false information. For example, although the overwhelming majority of public statements concerning BMD in recent

DECLASSIFIED

DECLASSIFIED

11

months have opposed deployment, the Harris Survey released February 3 reported that people favor a buildup of a system of anti-missile defenses by 61 to 23 per cent, or almost three to one. It is not clear, but presumably likely, that the people interviewed were thinking at least implicitly of city defenses.

The other of the two most important points I wish to make here concerns disarmament. I have read most of the other statements presented to you in these hearings, and I do not find that there has been much discussion before this Subcommittee on Disarmament Affairs of the subject of disarmament. The reason for this may well be that, as the only witness you have heard who is advocating what Senator Gore called an effective defense, I may be the only one you have heard who has a plausible theory of how you can do a lot of strategic disarmament. You can do it with defenses. Let me sketch roughly how it might go, complete with a possible timetable.

We might begin at once with a Soviet-American understanding about a ceiling on offensive forces, expressed in inspectable terms such as gross weight, and an understanding that we might both build up defenses. Such an agreement is clearly in the common interest of both the United States and the Soviet Union and should prove realizable. By the mid-1970's, if the defenses are in place and appear to have the capabilities now expected of them, there should be enough confidence in them to begin some gradual reductions of the offensive forces on both sides, reductions which would require only modest inspection because the defenses would (if suitably deployed) sharply diminish the effectiveness of clandestine missiles. The

DECLASSIFIED

DECLASSIFIED

12

defenses would then become even more effective against the then-reduced offensive-force threat, which would facilitate further reductions in offensive forces. Just how far this process might go would depend on the technological and political circumstances then prevailing, but I should not be surprised to find that by 1980 one might reduce the risk of Soviet-American strategic nuclear war to negligible proportions. The defensive forces themselves might, of course, be reduced along the route, but not eliminated. It should be clear that there would be some effective "disarmament" of the offensive-force potentials as soon as the defenses were working, even before direct reductions of the offensive forces.

In contrast, I do not believe any of the distinguished witnesses who preceded me have even the beginning of a plausible program for achieving major disarmament of the offensive forces by 1980. I believe it can be virtually guaranteed that it will not prove possible in this time period without substantial defenses. I should mention that following the program sketched here might lead to a strategic situation outside the range analyzed in my appended paper, but presumably it would actually go that far only if it appeared feasible, as I believe would be likely.

In addition to my own paper, I have attached below a very recent paper by my colleague Mr. Johan Holst, who has translated a recent article from Izvestia on American BMD and provided a brief but very persuasive commentary on current Soviet perspectives on the subject.

DECLASSIFIED

DECLASSIFIED

13

That completes my prepared statement. I shall, of course, be delighted to respond to questions and discussion. While I am fairly familiar with technical details, and willing to answer technical questions as far as I can, my primary expertise is in the strategic, political, and arms-control aspects of missile defense, and suggest that we should emphasize these areas if possible.

DECLASSIFIED

DONALD G. BRENNAN

Hudson Institute
Croton-on-Hudson
New York 10520

Donald G. Brennan is a mathematician and student of national security problems. His special interests are in advanced military policy, alliance relationships in Europe, and selected areas of arms control, such as policy issues relating to ballistic missile defense.

Prior to joining Hudson Institute, of which he was President from July, 1962 until May, 1964 and where he now conducts research studies, Dr. Brennan worked for nine years as a research mathematician and communication theorist at Lincoln Laboratory of Massachusetts Institute of Technology, engaged in technical studies for the Government. In addition to his technical research there, he devoted substantial time to studies of arms control and national security problems.

Dr. Brennan's serious interest in arms control began in 1957, when he was organizer of a group that led to the 1958 Summer Study on Arms Control held in Cambridge, Massachusetts, under the auspices of the American Academy of Arts and Sciences. In 1960 he was an organizer and co-director of the Summer Study on Arms Control, again held in Cambridge under American Academy auspices, in which some sixty experts participated. He was a member of the Academy's Committee on International Studies of Arms Control in 1961-66, serving as its chairman in 1961-62, and has been a frequent participant in international conferences relating to arms control.

Dr. Brennan has served as consultant to the Department of State, the Department of Defense, the Arms Control and Disarmament Agency, the Executive Office of the President, and is a member of a Task Force of the Defense Science Board. He is editor of the well-known anthology, Arms Control, Disarmament, and National Security (New York, George Braziller, 1961), sponsored by the American Academy of Arts and Sciences, and guest editor of its predecessor, the special (fall 1960) issue of Daedalus on "Arms Control". He is editor of the new international journal Arms Control and National Security and has edited studies of future military technology. He has contributed articles on arms control to a number of journals, and has lectured on national security subjects at Harvard, Massachusetts Institute of Technology, the University of California, and defense study centers in London, Bonn, Paris, and Oslo, among others, and has given seminars on arms control in Moscow.

Born in 1926, Dr. Brennan received the B.S. (1955) and Ph.D. (1959) degrees in mathematics from Massachusetts Institute of Technology, where he was a Gerard Swope Fellow and received other graduate and undergraduate prizes and awards. Prior to entering M.I.T., he was engaged in radio engineering as a registered professional engineer in the State of Connecticut. He is a Senior Member of the Institute of Electrical and Electronic Engineers and a member of Sigma Xi, the American Mathematical Society, and the Institute for Strategic Studies, London. He was a member of the President's National Citizens' Commission on International Cooperation Year in 1965.

DONALD G. BRENNAN

Return to I/pa-10, Harley

DECLASSIFIED

THE CASE FOR MISSILE DEFENSE

By D. G. Brennan

Reprinted from

FOREIGN
AFFAIRS

AN AMERICAN QUARTERLY REVIEW



APRIL 1969

DECLASSIFIED

DECLASSIFIED

THE CASE FOR MISSILE DEFENSE

By D. G. Brennan

THE subject of defense against ballistic missiles probably occupies a unique position among strategic issues of the nuclear era. It has been more intensely debated in the United States than any other weapon system selected for deployment, such as the air-defense system or Polaris or Minuteman, or than any arms-control measure adopted to date, including the ban on nuclear tests. In fact, the decision to deploy such defenses may well be more important than any other single decision so far made concerning our strategic nuclear forces. Most of the published articles relating to defense against ballistic missiles (BMD for short; sometimes, but not here, denoted ABM) have opposed deployment of missile defense by the United States.¹ This is odd, in view of the fact that, at least through 1968, the Administration and Congress both clearly supported American deployment of BMD, and that most senior American academic strategists and many prominent advocates of arms control favor deployment at least under some conditions. The doubts increasingly expressed in the Congress in early 1969 may well result from the highly one-sided literature on the subject.

The present article is an attempt to clarify some of the reasons why many analysts think it entirely reasonable to favor American deployment. It will concentrate on considerations relating to an American BMD system intended to have substantial effectiveness against major Soviet attacks, rather than on a so-called "light" or "thin" system intended to be effective only against Chinese or other marginal attacks. The system now being deployed—the Sentinel—has been identified as an anti-Chinese system, but much of the support (both inside and outside the Government) for the Sentinel decision came from those who believed that the system would eventually have significant capability against large Soviet attacks. It seems very likely (and de-

¹ Including three recent articles in *Foreign Affairs*: J. I. Coffey, "The Anti-Ballistic Missile Debate," April 1967; Robert L. Rothstein, "The ABM, Proliferation and International Stability," April 1968; and Carl Kaysen, "Keeping the Strategic Balance," July 1968. An important exception is Charles M. Herzfeld, "Ballistic Missile Defense and National Security," *Annals of the N.Y. Academy of Sciences*, November 22, 1965, p. 119-125.

DECLASSIFIED

DECLASSIFIED

sirable) that whatever system finally emerges will eventually have such a capability, and therefore it seems appropriate to concentrate here on the actual policy issues this prospect presents.

II

In an important sense, the key issues in the debate about BMD are not technical. Within the community of people who have carried out the BMD development, certain estimates have been made as to the plausible range of technical and economic effectiveness of systems that can be achieved in the near future. These estimates are subject to some controversy, yet even if the uncertainty and controversy concerning these estimates were wholly removed, most of the articulate critics of BMD would remain critical: their objections are rooted in other concerns. Nevertheless, technical issues are vital to the debate, since most of the support for BMD deployment depends on the fact that a defense of substantial effectiveness is judged to be feasible.

The most common way of characterizing the effect of a BMD system is to estimate the number of lives it might save in various specified circumstances. In a table of such estimates given in McNamara's 1968 posture statement,² it was indicated that there could be 120 million American fatalities in certain possible wars of the mid-1970s if no significant BMD were deployed. Assuming opposing forces and attacks of the same strength, it was indicated that BMD systems costing from \$10 to \$20 billion could reduce American fatalities to between 10 and 40 million, depending on the level of the defense and the details of the war. Damage to production and transportation resources would, of course, be similarly reduced, a result that could not be achieved with economically feasible civil-defense shelter programs. Thus, such a defense might change the postwar situation from one in which over half the U.S. population was gone, and recovery in any time period would be problematical, to one in which perhaps 90 percent survived and economic recovery might be achieved within five to ten years. This difference would be enormous.

It is this possible difference that constitutes the major reason for deploying heavy defenses. In effect, procuring such defenses is like buying "insurance" that would limit the consequences of

² The main published sources of information for use in considering the prevailing technical estimates are the unclassified "posture statements" issued annually in recent years by the Secretary of Defense, especially those issued by McNamara in 1967 and 1968, although some supplementary information has been contained in Government hearings and speeches.

DECLASSIFIED

DECLASSIFIED

THE CASE FOR MISSILE DEFENSE

435

a war; the outcome would still be a disaster, but probably one of a very different order than would result from having the same offensive forces expended in a war with no missile defense.

It is possible that a BMD system might perform in an actual war much less well than expected, because of some unforeseen technical failure; it is, however, about equally likely that the opposing offensive forces will perform much less well than expected, which is to say that the defenses may perform much better than expected. (Critics of BMD are prone to emphasize the first of these points much more than the second.)

Of course, the U.S. defense might have to face a larger offensive force than the Soviets would have created if the U.S. defense did not exist. In other words, the Soviets could increase their offensive force so as to nullify, partly or wholly, the U.S. defense. Whether or not they seem likely to try to do so, it is important to consider how difficult it would be to achieve. This is one of the important technical characteristics of offense-defense interactions.

A useful way of characterizing the degree of difficulty is with a parameter called the "cost exchange ratio," defined as follows. The United States might deploy a particular defense system at a particular cost. It would generally be feasible for the Soviets to add an increment to their strategic offensive forces that would offset or nullify the opposing defense, and this increment of offense would also have a particular cost. The relation between the cost of the offsetting increment of offense and the cost of the defense is called the "cost exchange ratio." Thus, relatively ineffective defenses would have a relatively low cost exchange ratio, while a defense system that was relatively difficult to penetrate would have a relatively high ratio.

Several years ago, it was widely believed that missile defenses were easy to penetrate—so easy that offensive increments costing only one or a few percent of the cost of the opposing defense would serve to nullify it. In recent years, however, it has become apparent that cheap forms of decoys and other penetration aids cannot be relied upon to nullify modern defense techniques. A good defense can be overcome, but it is difficult. This is reflected in the fact that cost exchange ratios for a good defense are now believed to be in the region of one to one—perhaps one-third or two, but not one-tenth or ten. Thus, it is about as expensive to nullify a good defense as to build it.

DECLASSIFIED

DECLASSIFIED

Some specific examples were provided in the 1967 posture statement. Two postulated defense systems were considered, one costing \$10 billion and the other \$20 billion. Under the conditions of a hypothetical war in which U.S. fatalities were estimated to be 100 million without any missile defenses, these BMD systems reduced the fatalities to 30 million and 20 million, respectively, if the Soviets did not change their offensive forces in reaction to the defenses. If the Soviets added an increment to their offensive forces costing one-quarter as much as the American BMD, they could raise American fatalities to 40 million; if they spent one-half of the cost of the defenses, they could raise the level to 60 million; and if they spent as much as the full cost of the defense, the fatalities would rise to 90 million. To raise the level of fatalities back up to the undefended level (100 million)—the usual criterion of offsetting a defense—would require an increment in the Soviet expenditure that would exceed the cost of the defense. These calculations assumed that the Soviets had advanced technology for their offensive forces and made effective use of it. Since these estimates were published by Secretary McNamara, who was a strong critic of missile defenses, it can be assumed that they are not biased in favor of missile defenses.

Although McNamara published information showing that exchange ratios were about unity as far back as January 1967, and although information to this effect was known in the Government for perhaps two or three years before that, many critics of missile defenses continue to assert that it is cheaper to offset defenses than to build them. For example, Carl Kaysen, in his recent article in this journal, said: "Were we to deploy much stronger and more costly defenses [than the initial Sentinel program] it would remain within the Soviet capability to counter them by corresponding increases in the size of their offensive deployments—which could probably be made at significantly less cost than that of our increased defenses" (emphasis added). If "counter" means "wholly or largely offset," as is usual and as Kaysen's context suggests, there is no objective basis for the italicized statement, and there has not been for some few years.³

Many critics of BMD have questioned the estimate of the cost. McNamara, in speaking about the \$20 billion program, several

³ Other examples of mistaken reference to exchange ratios are found in the much-cited article in *Scientific American*, March 1968, by Richard L. Garwin and Hans A. Bethe, and in the *Look* article by Jerome B. Wiesner, November 28, 1967.

DECLASSIFIED

DECLASSIFIED

THE CASE FOR MISSILE DEFENSE

437

times referred to the fact that many weapon systems proved to cost twice as much as originally estimated, as indeed they have, and suggested that this program would more likely cost \$40 billion when completed. Some journalists and others have in turn doubled McNamara's estimate once again, and one can find articles and newspaper editorials referring to BMD systems alleged to cost \$80 to \$100 billion. It is difficult to escape the feeling that these latter estimates are made purely for their political effect and have no significant basis in reality. At the time official estimates were worked out, missile defense systems had been much more extensively studied than many of the weapon systems whose early cost estimates proved much too low.

Obviously the relationship between cost and performance of systems as large and complex as those considered here cannot be specified in advance with anything like precision. This should not obscure the fact that the range receiving major consideration or advocacy is, say, \$8 to \$20 billion. For some perspective on this range of costs, it is instructive to consider that the United States has spent perhaps \$50 billion on air defense since World War II.⁴ We are currently still spending about \$2 billion per year on air defense. And, while estimates of its effectiveness are not publicly available, it is a good bet that the current air-defense system is and has been less important as insurance for the country than the major proposed BMD systems would be.

Will our estimates of cost effectiveness stand up when we get to the mid-1970s? A question in this form does not admit an unequivocal answer; one cannot say with confidence whether inventions not yet made or developments not yet realized will favor the offense or the defense, although there are some reasons for thinking the trend will continue to favor the defense. But a parallel may be useful. We have fairly high confidence that the Polaris submarine force is a reasonably secure component of our strategic offensive forces. The main reason for this confidence resides in the fact that we have conducted a major research and development program—on the order of \$500 million per year—in anti-submarine warfare for many years, and no cheap and reliable way of attacking such submarines has been found. A similar statement is beginning to be true in relation to BMD:

⁴ Herbert Roback, Staff Administrator of the Military Operations Subcommittee, U.S. House of Representatives, in E. P. Wigner, Editor, "Who Speaks for Civil Defense?" New York: Scribner, 1968, p. 95.

DECLASSIFIED

DECLASSIFIED

for several years, we have conducted a major research and development program—on the order of \$350 million per year—in means of penetrating missile defenses, and no cheap and reliable method has been found. This does not guarantee that one cannot be found, and it does not say that expensive ways of penetrating are not known—as are expensive ways of attacking Polaris submarines. But it does suggest that the technical prospects for missile offense-defense interactions are likely to prove acceptably stable, and in particular should be a great deal better than the early estimates of air defense proved.

It is worth noting that a BMD system may possibly have important effects even if it later failed to perform as expected in a war. If the Soviets were to react to a U.S. defense by fitting their existing missile force with decoys and other penetration aids, without a major increase in the number of rockets, they would reduce the total payload available for warheads, and thereby reduce the potential damage the U.S. might incur in a war even if the defense failed utterly. This effect, which is known in the trade as “virtual attrition” and is often encountered in defensive systems of other kinds, is likely to be quite modest. A more important possibility is that a U.S. defense would induce the Soviets to re-target their offensive force; they might concentrate most or all of their offensive missiles (apart from those used for missile bases or other military targets) on the largest cities to be sure of destroying them, and leave unattacked many medium and small cities. Or they might attack only undefended areas, and leave aside most or all the largest (defended) cities. In either case, the mere presence of the defense could result in saving many millions of lives whether it “worked” or not.

There are three other positive reasons for favoring BMD deployment. First, the time may soon arrive, if it is not already here, when there will be some possibility of attacks of anonymous or disguised origin. Since these would not be subject to standard threats of deterrence, active defenses may be the primary protection against them. Second, the possibility of a purely accidental launch of some part of the Soviet force is probably very remote, but the possibility of an unauthorized launch, especially during an intense crisis, may not be so remote and should be protected against. Even a modest defense might be very effective against such an attack; this has been one of the arguments used—rightly, I believe—in support of the current Sentinel program.

DECLASSIFIED

DECLASSIFIED

THE CASE FOR MISSILE DEFENSE

439

Third, missile defenses (even light defenses) would considerably complicate the planning of an attacker who hoped to penetrate them; this phenomenon seems likely to serve as an additional "firebreak" to the initiation of a strategic nuclear war.

III

One of the main areas of concern to critics of missile defense has to do with its impact on fundamentals of deterrence. The problem has often been related to what McNamara termed "Assured Destruction," defined by him in his 1968 posture statement as "an ability to inflict at all times and under all foreseeable conditions an unacceptable degree of damage upon any single aggressor, or combination of aggressors—even after absorbing a surprise attack." McNamara recognized that what constituted "an unacceptable degree of damage" was not subject to precise specification, and in spelling out this requirement, he said: "In the case of the Soviet Union, I would judge that a capability on our part to destroy, say, one-fifth to one-fourth of her population [*i.e.* about 50 million Russians] and one-half of her industrial capacity would serve as an effective deterrent."

Because McNamara came to regard the ability to destroy 50 million Russians as the keystone of Western security, he viewed Soviet deployment of BMD as a potential threat to that security, and intended to nullify any Soviet defenses with added U.S. offensive forces. He also appeared to believe, and frequently asserted, that the Soviets had a similar requirement for an Assured Destruction capacity, and that any U.S. interference with this requirement would in all likelihood only cause the Soviets to increase their offensive forces. It appears that this perception was at the core of McNamara's opposition to BMD deployment, as it was for many other opponents of missile defenses. The U.S. strategic posture that has evolved from this perception in recent years has been aptly dubbed "Assured Vulnerability" by Stuart Pittman.⁵

Although there were many criticisms made of the "massive retaliation" policy when it was adopted in the early 1950s, there were few if any criticisms to the effect that the U.S. threat was inadequately deterring. Yet it is doubtful if the Soviet fatalities that our force could then have produced would have exceeded a

⁵ Stuart Pittman, former Assistant Secretary of Defense for Civil Defense, "Government and Civil Defense," in Wigner, *op. cit.*

DECLASSIFIED

DECLASSIFIED

few million. And this was the Soviet Union of Stalin, believed to have a six-million-man army, a Soviet Union which had only recently subjugated Eastern Europe, and which was believed to have instigated or at least approved the Korean War. Not even the recent Czech invasion makes the Soviet Union of today seem nearly as threatening.

Of course, when major direct Soviet attacks on the United States became possible, the structure of the situation changed considerably. It might then have become possible for the Soviets to have eliminated the United States as a fighting society, and thereby to secure Europe and eliminate their principal opponent at one blow. Thus, many strategists judged that there were two reinforcing reasons why it was appropriate to react to this possibility with a large strategic threat to deter it. This was the fundamental driving force behind the evolution in the late 1950s and early 1960s of a U.S. strategic threat measured in thousands of megatons—a deterrent threat for which Assured Destruction was indeed the correct phrase.

It is clear from the origin of this perfectly reasonable logic that, to the extent the maximum possible Soviet motivation for such an attack might have been reduced, or to the extent the U.S. motivation to deter it might have been reduced, the scale of the retaliatory threat might have been reduced in some corresponding degree. It is this linkage that appears to have been wholly overlooked. Instead, we preferred to fix once and for all some intended level of Assured Destruction believed capable of deterring the Soviets from any actions whatever. There are a number of problems resulting from such a posture, of which the most immediate for our purposes is that it tends to make it difficult for us to limit damage to *ourselves*—i.e. it tends to force *us* into a posture of Assured Vulnerability.

In particular, a determination to maintain a strong capability for Assured Destruction led McNamara in 1967-68 to respond to incipient Soviet missile defenses by scheduling an increase in our offensive forces, and the theory that the Soviets would do likewise led him to oppose American deployment of an anti-Soviet BMD system. In view of the effectiveness of modern defense, we might better use the U.S. resources committed to increasing our offensive forces to increase our defenses instead. By thus reducing the Soviet threat, rather than increasing our own, we could reduce both the extent to which the Soviets might gain

DECLASSIFIED

DECLASSIFIED

THE CASE FOR MISSILE DEFENSE

441

by attacking us, and the extent to which we are intensely motivated to deter the attack.

Consider a situation in which Soviet and American offensive forces are fixed at similar unchanging levels on each side, and in which both the United States and the Soviet Union are building comparable levels of defenses. If the American and Soviet defenses are both "light," then our BMD would not much diminish Soviet ability to destroy us, but then Soviet BMD would not much reduce the effectiveness of our assured-destruction forces either; if both American and Soviet defenses are "heavy," then our assured-destruction forces would be significantly degraded, but so too would the capability of the Soviets to eliminate the United States as a fighting society.

This points to the following formulation of a reasonable requirement for a conservative American strategic posture: Following any plausibly feasible strategic attack by the Soviet Union, the United States should have the capacity to inflict as much or more total damage (of similar kind) on the Soviet Union as the Soviets had inflicted and could still inflict on the United States. (This principle implies that the strategic offensive forces must be quite well protected, which appears to be feasible.) In short, we should have a reliable capability to do at least as badly unto the Soviets as they had done or could do unto us. The Soviets could not achieve a significant military advantage by a strategic attack, and an irrational, coercive or punitive attack—whether large or small—would risk bringing as much or more destruction on the Soviets as they could or did bring on us. This would make the initiation of nuclear blackmail unattractive to any reasonable decision-maker at any effective level of strategic forces.

Let us note explicitly that this posture does not imply that a U.S. capability to destroy 50 or 74 or 100 million Russians is a fundamental requirement of nature, without regard to the circumstances. It indicates that both the United States and the Soviet Union might reasonably engage in some measures to limit the possible damage of a war without necessarily impairing American security in the process. Such measures might include, for instance, direct reduction of strategic offensive forces by agreement—or deployment of defenses with or without explicit agreement. It is interesting that the United States has, in fact, proposed direct reductions in strategic offensive forces. Now, if

DECLASSIFIED

DECLASSIFIED

certain necessary requirements are met, as they can be, a symmetric increase in active defenses deployed by each of the superpowers would have approximately the same kind of potential impact on possible war outcomes that percentage cuts in offensive forces would have.

One may ask: If BMD deployed by both superpowers would have roughly the same effect on possible war outcomes as direct reductions in offensive forces would have, why not simply reduce the latter, and save the money and trouble of BMD? The answer is that in some circumstances one might, but the circumstances are not those now prevailing. To reduce U.S. and Soviet offensive forces to a level where the possible casualties on each side (without defenses) would not exceed, say, 20 million, is likely to be acceptable to the United States only with a degree of inspection that is most unlikely to be acceptable to the Soviets. In other words, offensive-force cuts on such a scale do not now seem politically feasible, whereas BMD deployment is entirely feasible and, rather than increasing U.S. needs for inspection of Soviet offensive forces, might actually reduce our dependence on such information. This effect, indeed, would facilitate later direct reductions in offensive forces.

From the mid-1950s to the mid-1960s, the strategic postures of the superpowers were dominated by the logic that, since we could not defend, we had to deter. This position, for which there was originally ample justification, now seems to be interpreted in some minds—chiefly certain American ones—to mean that, since we must deter, we cannot defend. This should count as the non sequitur of the decade.

IV

The final major concern of critics of missile defense is that it will lead to an arms race or complicate arms-control problems. The kind of arms race usually envisaged is an offense-defense race in which, say, the United States procures some missile defenses and the Soviet Union then feels obliged to respond by increasing its offensive forces sufficiently to nullify the defense. This increase in Soviet offensive capability might in turn motivate the United States to increase its defense capability still further, and so on. For example, McNamara said in his 1967 posture statement: *"It is the virtual certainty that the Soviets will act to maintain their deterrent which casts such grave doubts on the*

DECLASSIFIED

DECLASSIFIED

THE CASE FOR MISSILE DEFENSE

443

advisability of our deploying the NIKÉ-X system for the protection of our cities against the kind of heavy, sophisticated missile attack they could launch in the 1970s. In all probability, all we would accomplish would be to increase greatly both their defense expenditures and ours without any gain in real security to either side." (The whole of this passage is underscored in the original.) If arms races of this kind occur, it will not be in response to some fundamental law of nature, but will result from interactions between achievable technology and prevailing attitudes and budgets. Each of these factors is of importance.

It is useful to discuss this problem in terms of the concept of cost exchange ratios. If cost exchange ratios were as low as 1:100, there would be little doubt that, within the present political environment, a defense system deployed by one superpower would be nullified by the other. For example, if the Soviets built, say, a \$20 billion system, and if it could be neutralized at a cost of only \$200 million, there would scarcely be any debate about the matter within the U.S. bureaucracy, the Congress or the public; the Defense Department would simply go ahead and neutralize the Soviet defense. On the other hand, if cost exchange ratios were in the neighborhood of 100:1, there would again be little debate: defense would reign supreme, and deterrence would rest on very different threats and counter-threats than those that loom as dominant today. In this case, to nullify a \$20 billion Soviet defense would cost the United States \$2,000 billion. The expenditure of such a sum is not, of course, a realistic possibility, and the United States would instead be building its own defense—about which there would be little controversy, and which the Soviets could not offset either. In both cases, technology would dominate prevailing attitudes.

In the actual world, with cost exchange ratios near unity, the attitudes prevailing are not driven by the technology toward either deterrence or defense, but may (and do) go in either direction. It is much more a matter of preference and conscious decision whether we and the Soviets wish to spend our strategic-force budgets chiefly to increase the level of "hostages" on the other side or to decrease our own. Thus, whether we are to have an offense-defense arms race depends in the first instance on whether or not Soviet and American attitudes are lined up the same way. If both governments are willing to accept a high level of hostages on each side, with modest or no defenses, there will

DECLASSIFIED

DECLASSIFIED

be no great pressures for an offense-defense race; the same will be true if both are willing to live with substantial defenses and relatively low levels of hostages, with little or no attempt on either side to offset the defense of the other. But if one side attempts by defensive measures to reduce its own hostages below the level demanded by the other, or attempts to increase the hostages of the other above a level the other considers acceptable in the circumstances, and especially if both happen together in any combination, the resulting pressures for an arms race may well be limited almost entirely by budgetary forces.

The fact that these issues are importantly influenced by attitudes is not always clearly recognized. There is, however, something of a "fashion" in some circles against interfering with the so-called requirements for Assured Destruction on either side, especially when (almost only when) the interference comes from missile defense. But, as I have argued earlier, maintaining very high levels of possible damage to the Soviets does not seem to be a requirement of U.S. security in circumstances where we can correspondingly limit damage to ourselves, and appreciation of this seems likely to prove dominant in formulating U.S. policy in the future.

Soviet attitudes seem much less mixed than ours; they are much more friendly to the deployment of defenses. In particular, contrary to many statements by American critics, it appears that the Soviets are not significantly antagonized by the prospect of American missile defense. The Soviets have never been bashful about making political and diplomatic statements designed to deter American military programs they did not like; for example, they have recently made public statements opposing the operation of Polaris submarines in the Mediterranean and the operation of nuclear-armed bomber forces on air-alert. It would be remarkable in the extreme if the Soviets had the attitudes attributed to them by McNamara and others and yet did absolutely nothing to discourage U.S. defenses. The fact is, however, that there seems to be no reliable report of a single instance of a Soviet attempt to deter our BMD by statements indicating they would increase their offensive forces in response.

On the contrary, there have been many statements by individual Russians at both official and unofficial levels, both impromptu and carefully considered, pointing in a quite different direction. In a press conference in London on February 9, 1967,

DECLASSIFIED

DECLASSIFIED

THE CASE FOR MISSILE DEFENSE

445

Premier Kosygin was asked: "Do you believe it is possible to agree on the moratorium on the [deployment] of an anti-missile defense system [a then-current American proposal] and if possible on what condition?" He replied in part:

I believe that defensive systems, which prevent attack, are not the cause of the arms race, but constitute a factor preventing the death of people. Some argue like this: What is cheaper, to have offensive weapons which can destroy towns and whole states or to have defensive weapons which can prevent this destruction? At present the theory is current somewhere that the system which is cheaper should be developed. Such so-called theoreticians argue as to the cost of killing a man—\$500,000 or \$100,000. Maybe an anti-missile system is more expensive than an offensive system, but it is designed not to kill people but to preserve human lives. I understand that I do not reply to the question I was asked, but you can draw yourselves the appropriate conclusions.

Indeed, one can.

A detailed rebuttal to the standard arguments against BMD was given by the late Soviet military publicist Major-General N. I. Talensky in the quasi-official Soviet journal *International Affairs* in October 1964. Many other contacts with Russians at official and unofficial levels, including several meetings I personally have had the chance to observe, illustrate that the attitude exemplified by the Kosygin quotation is very widely held in the Soviet Union, while the attitude held by American critics of BMD with regard to the alleged importance of maintaining high hostage levels seems not to be held at all. The only criticisms of BMD that have been expressed by any Russians, so far as I am aware, have come from a few scientists who have been skeptical of the effectiveness of defenses and therefore regarded them as wasteful of resources. It is probably significant that these scientists seem not closely associated with current Soviet weapon programs; I believe it likely that they are following the lead of some of their Western friends and counterparts, but even these Russian critics seem not to share in the theoretical opposition to BMD.

One additional bit of evidence is worth mentioning. After the announced decision in September 1967 to deploy the Sentinel BMD system, the United States came under attack from some of our allies and neutral friends, especially from several countries participating in the Eighteen-Nation Disarmament Committee then meeting in Geneva, which complained that the American deployment decision would be bad for the incipient

DECLASSIFIED

DECLASSIFIED

446.

FOREIGN AFFAIRS

nonproliferation treaty and would only heighten the arms race. There was one country that came to our assistance, holding that the decision would not harm the prospects for the nonproliferation treaty: that country was the Soviet Union. So far as I am aware, this is the only case on record in which the Soviet Union has defended us diplomatically against our friends and allies. This is all the more remarkable in view of the fact that the Soviets did not, then or since, believe that the Sentinel system was intended only for Chinese attacks.

Some American critics of BMD have described these Soviet attitudes as "unsophisticated," and have argued that the Soviets will "get over it," and come to respond to an American defense as McNamara predicted even if they are not yet committed to it. It is true that strenuous efforts to "educate" the Soviets have been made by McNamara and others, and one cannot say with certainty that these efforts will fail; it would not be the first time that the Soviets lost their senses over some issue just as we were coming to ours.⁶ But their present views should not be denigrated; it seems to me, and to many other Western strategists, that the defense-oriented philosophy exhibited by the Soviets makes good sense. In fundamental matters of deterrence and defense, I should say that we in the United States might better acquire some "education" from the Soviets.

In view of the fact that Soviet attitudes already seem to favor defenses, and that American attitudes, while currently mixed, *ought* to favor defenses, the obvious way of trying to improve prevailing strategic postures through arms-control arrangements is to limit offensive forces primarily, and to limit defenses only secondarily, if at all. This is exactly the reverse of the order of priorities frequently suggested in the United States in the past few years. It is, however, more in keeping with the traditional aims of arms control. The primary objectives of arms control have often been stated to be reduction of the likelihood of war or mitigation of its consequences if it occurs. It seems to me highly probable that deployment of missile defenses will contribute to both of these objectives, while abstaining from defenses will likely contribute to neither. If the deployments are managed with at least modest intelligence on both sides, there need not be an arms race nor appreciably higher expenditures.

⁶ Since it will be clear that I am critical of McNamara's handling of BMD, I should mention that I still believe he was the greatest Secretary of Defense the United States has had.

DECLASSIFIED

DECLASSIFIED

THE CASE FOR MISSILE DEFENSE

447

A major objection to a posture with a heavy component of defense is that the Soviets might find some way of attacking our offensive forces with sufficient effectiveness so that their defenses could intercept most or all of our remaining offensive forces. By striking first, they might escape relatively unscathed—which, if true, could motivate the initiation of a first strike in an intense crisis. Obviously no one could give an absolute guarantee that such a weakness could not occur. Major studies of BMD performance do not show a dramatic dependence on who strikes first, so this concern has no current substantial basis; it is rather an apprehension about some future possible vulnerability that might occur. It would require a vulnerability in our offensive forces of the kind that people have been trying to prevent for years. If the United States, through BMD, provides added protection to its offensive forces, there would seem to be no reason whatever for believing that heavy defenses on both sides would leave us more vulnerable to this type of problem than we are at present.

In fact, such vulnerabilities might be reduced. There are risks in any strategy and our offensive forces of the present and of the recent past may well have had important vulnerabilities, including undetected ones. For example, Senator Henry Jackson, in a Senate speech of last September, discussed electromagnetic-pulse phenomena from nuclear bursts in terms that suggest these phenomena are a continuing source of concern for the security of our offensive forces. A potential vulnerability of a different type might have threatened our land-based missiles if the Soviets had developed multiple, independently targeted reentry vehicles (MIRV) before we had understood the concept ourselves. In view of these and other vulnerabilities of major or potentially major concern, it is not at all obvious, to say the least, that a posture of pure deterrence, based wholly on offensive forces, would be more secure against unpleasant surprises (such as a suddenly discovered, extreme vulnerability to a first strike) than postures with heavy emphasis on defense. Even if there were some added risk associated with the defensive posture, this would have to be weighed against the possibility that the defense might save 50 or 80 million Americans in the event of a major war, and make possible much more rapid economic recovery.

There is also a line of argument which is sometimes summarized by saying that, in matters of defense, one cannot be "a

DECLASSIFIED

DECLASSIFIED

little bit pregnant"—that is, that public and other pressures for "more" will lead to a defensive arms race. Our experience in both air defense and civil defense is so much against this idea that it should be dismissed without further discussion. Similarly, it is sometimes said that the American public would not tolerate any inequalities in local defense effectiveness. We have had a major air-defense system with substantial inequalities for perhaps 15 years, and scarcely anyone other than experts associated with the system is even sure whether his own home city *has* a local defense, much less how it compares to those of other cities. The degree of awareness of these matters that has prevailed in the past in the general public is reflected in a public-opinion poll conducted in 1964 which found that two-thirds of the U.S. public believed we had a BMD system all deployed and ready for action.

Space has not permitted here a discussion of several other problem areas sometimes associated with missile defense, such as the implications of an American BMD for the Western Alliance, or the frequently repeated assertion (which I believe is false) that BMD would require as a prerequisite a major expansion of civil-defense programs. Several scholars have, however, studied these problems, and I believe it is fair to say that, on examination, they seem even less likely to prove troublesome than the problems already considered.

It appears to many that achievable defenses could reduce potential American fatalities by many tens of millions, and greatly improve the prospects for postwar economic recovery—and do this without substantially increasing traditional strategic budgets, and without provoking a major new arms race. If the American public and their leaders come to this view, they are most unlikely to judge that pursuit of Assured Vulnerability is a proper objective of the Department of Defense.

The defense rests.

DECLASSIFIED